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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,776	01/14/2004	Koichiro Tanaka	0756-7239	3573
31780 7590 02/23/2007 ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			EXAMINER NGUYEN, PHILLIP	
			ART UNIT	PAPER NUMBER
			2828	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/23/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/756,776

Applicant(s)

TANAKA, KOICHIRO

Examiner

Phillip Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 and 31-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18, 31-42 and 46 is/are rejected.
- 7) ☒ Claim(s) 43-45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-18, 31-42, and 46 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "said square or rectangular cross-section" which lacks of antecedent basis.

Claims 2-9 depend on claim 1 and become indefinite as well.

### ***Claim Rejections - 35 USC § 102***

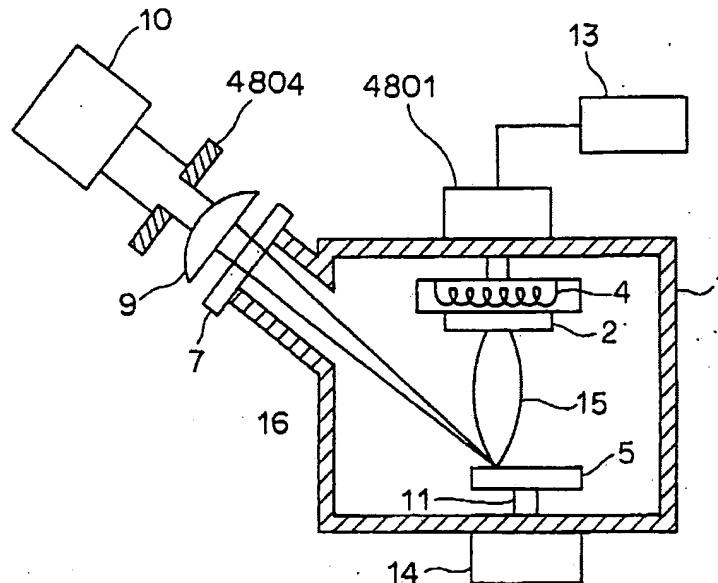
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4, 8-11, 13, 17-32, 34, 38-42, and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Kojima et al. (US 5622567).

FIG. 14



With respect to claims 1 and 31, Kojima discloses the claimed invention, especially in Fig. 14, an apparatus for irradiating a laser beam comprising a laser oscillator 10 for emitting a plurality of laser beams having different wavelengths from each other (col. 10, lines 33-44); an optical system 7 and 9 for informing an energy distribution of each of laser beams and for processing each of said plurality of laser beams having different wavelengths from each other into said square or rectangular cross-section on said surface an object 5 to be irradiated; and a stage 11 over which the object to be irradiated is disposed. It is noted that optical system 9 is a cylindrical lens which outputs beams having linear cross section.

With respect to claims 2, 11, and 32 Kojima also discloses the laser oscillator 10 includes YAG laser (Fig. 81).

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With respect to claims 4, 13, and 34 Kojima discloses said object is a non-single crystal semiconductor film comprising silicon (col. 38, lines 55-64)

With respect to claims 8, 17, and 38, Kojima further discloses the wavelength of 19 nm which is less than 600 nm.

With respect to claims 9, 18, and 39, see the abstract.

With respect to claims 10 and 46, Kojima discloses the claimed invention as shown in the rejection of claims 1 and 31 with means for moving the object is the stage 11 and 14 wherein the means for moving object is a linear motor 14.

With respect to claims 40-42, 7 is first optical system and 9 is the second optical system.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 5-7, 12, 14-16, 33, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al. (US 5622567) in view of Byer (US 5673281).

Kojima discloses the claimed invention with suggestion using YAG laser for the laser oscillator except for explicitly teaching if the YAG is a zigzag type and the different wavelengths from each other comprising second, third, and fourth harmonic laser beams. Byer discloses in Fig. 3 a zigzag slab type YAG laser with a second harmonic beam generated by the nonlinear

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crystal 22. It would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide zigzag type laser and frequency doubling crystal as taught by Byer to Kojima in order to extend the optical path in the laser medium to provide more gain from the same laser medium (col. 8, lines 5-9). It is well known in the art to nonlinear crystals and arrange them in external cavity could result higher order harmonic wavelengths such as third and fourth harmonic.

***Allowable Subject Matter***

5. Claims 43-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Communication Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.

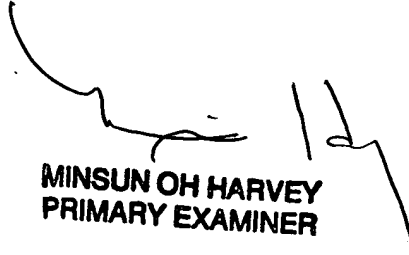
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Phillip Nguyen/

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**MINSUN OH HARVEY**  
**PRIMARY EXAMINER**